

## From bedside to bed

### *Recovery of sexual function after prostate cancer*

Peter J. Pommerville, MD, FRCSC

In this issue of *Canadian Family Physician*, Dr Katz (page 977) provides a good review of sexual function outcomes after prostate cancer treatment. The article is timely, as prostate cancer is now the most common nondermatologic cancer among men in Canada. While it is important to treat the cancer effectively, the possibility of lingering effects on urinary and sexual function is also of great concern to men facing the difficult choices surrounding screening and treatment.

There are substantial sexual consequences to diagnosis and treatment of prostate cancer, involving physiologic and psychological challenges. Katz's review describes the sexual consequences of each prostate cancer treatment and suggests treatment options for the related sexual side effects. Patients treated for prostate cancer by a urologist will, in most cases, be followed up by their family physicians. It is important, therefore, for family physicians, as well as urologists, to know about the sexual consequences of various prostate cancer treatments so that they can better counsel patients facing these outcomes.

#### Prostatectomy

A substantial body of evidence shows that prostatectomy causes loss of erectile function in 30% to 90% of men. This can vary depending on their age, their erectile function before surgery, and the degree of cavernous nerve sparing during the operation. Because this type of surgery results in traumatic insult to the prostate gland and surrounding tissues, it is likely that all prostatectomy patients will experience some level of erectile dysfunction (ED) at some point (usually immediately after surgery). This could be either inability to achieve an erection or inability to maintain an erection

adequate for intercourse. Patients usually report severe ED. The recovery of erectile function after radical prostatectomy occurs slowly, and maximal recovery after bilateral nerve-sparing radical prostatectomy has been shown to take up to 4 years.<sup>1</sup>

After prostatectomy, most men experience dry orgasms in which there is no ejaculatory fluid. The prostate and seminal vesicles, responsible for the fluid in semen, have been removed. As a result, the vas deferens, the tube that transports sperm from the testicles, is shut off. Radiotherapy similarly causes loss of ejaculatory function by progressive fibrosis of glandular tissue. Lack of fluid emission has not been shown to be connected to ability to feel sexual desire and arousal or to achieve orgasm. It is important, however, for family physicians to explain to patients that, after surgery or radiation, they might experience changes in ejaculation.

#### Improved understanding

The availability of oral therapy has dramatically improved our understanding of ED and has changed the approach to its management.<sup>2</sup> Phosphodiesterase type five inhibitors are generally accepted as first-line treatment for ED. As such, more invasive options (vacuum devices, injectable agents, and intraurethral therapy) should be reserved for second-line therapy. Vardenafil is now well accepted as a treatment option for ED after prostatectomy based on clinical trial results (level I evidence).<sup>3</sup> The trial was conducted in Canada and the United States, and in a manner that best represents what is experienced in urologists' and GPs' offices. The report by Brock et al<sup>3</sup> is the current definitive paper on phosphodiesterase type five inhibitors and radical retropubic prostatectomy. Multiple sites were included (24 in Canada)

and, therefore, multiple surgical techniques are represented. The study included patients who had undergone unilateral or bilateral nerve-sparing radical prostatectomy, and nearly 90% of patients were unable to achieve an erection sufficient for penetration or intercourse at postsurgery baseline. All patients enrolled in the study had normal erectile function 6 months before surgery, but at postsurgery baseline 70% of men had severe ED. Vardenafil was shown to be effective regardless of the severity of ED at entry in the study, and 10- and 20-mg doses were substantially superior to placebo for all primary efficacy measures. In patients who underwent unilateral nerve-sparing retropubic radical prostatectomy, vardenafil was effective in promoting erections for 64% of men taking 10 mg of vardenafil and for 55% of those taking 20 mg.

It is notable that, within this particular study, two additional scales were analyzed—the Duke Health Profile and the Centre for Epidemiologic Studies Depression Scale—as ED and quality of life are often negatively associated.<sup>4</sup> Overall, 20 mg of vardenafil improved depression domain scores in the Duke Health Profile versus placebo ( $P < .05$ ). In the subgroup of men with Centre for Epidemiologic Studies Depression Scale scores indicative of depression at baseline, 20 mg of vardenafil significantly improved scores versus placebo (10.8 versus 17.9,  $P < .001$ ).

The current “hot topic” is early treatment with these pharmacologic agents, which can lead to a greater response rate after prostatectomy. The basis of prophylactic use of these agents after treatment lies in improved corporal blood flow by facilitation of nocturnal erections. Montorsi et al<sup>5</sup> showed that early postoperative use of alprostadil injection could increase the recovery rate of spontaneous erections. Sildenafil citrate taken at bedtime for 9 months after bilateral nerve-sparing radical prostatectomy has been reported to increase the return of spontaneous erections.<sup>6</sup> Use of other phosphodiesterase type five inhibitors, such as vardenafil, would likely yield similar results.

### Radiation

The review by Dr Katz proposes that external beam radiation causes ED in about 50% of men

and brachytherapy causes ED in about 25% of men. New data reported by Merrick and colleagues<sup>7</sup> show that brachytherapy-induced ED might be more frequent (occurred in 50% of patients at 3 years). This should also be taken into account when counseling patients about treatment options.

It should be noted that the types of tissue damage that lead to sexual dysfunction in men after radical prostatectomy and radiation therapy are different. Radiation-induced damage leading to ED includes smooth muscle cell damage and cell death, progressive fibrosis, and destruction and disorganization of the muscular layers of the bladder walls.<sup>8</sup> Erectile dysfunction can also result if the nerves responsible for erections and the vascular vessels surrounding the area are damaged during radiation. These nerves and vascular vessels run directly over the surface of the prostate and, depending on the extent and location of the tumour, the nerves can be very difficult to avoid. Onset of ED following radiation therapy is gradual; it usually begins about 6 months after treatment and can continue to deteriorate for 4 years.<sup>9</sup> When deciding on a cancer treatment for patients, physicians should also take into consideration the probability of ED and whether, over time, erectile function will improve or degrade further.

### Hormonal effects

It is known that hormonal therapy affects both sexual interest and function in 80% to 90% of men. The male sex hormone testosterone is responsible for libido as well the ability to achieve an erection. Therefore, when hormone ablation therapy stops testosterone production, men often lose interest in sexual activity. These effects can occur approximately 2 to 4 weeks following initiation of the therapy.

### What can be done

Erectile dysfunction can greatly affect quality of life among patients who have had prostate cancer treatment, and every effort should be made to improve sexual outcomes among patients who have undergone these procedures. Family physicians and

urologists can help their patients before, during, and after treatment through effective counseling of what to expect and of the sexual dysfunction treatments that are available. Physicians should:

- advise patients to be sexually active before treatment, which can improve their confidence and blood flow to the penis;
- ensure that patients and their partners understand that ED treatments might take a few tries to work, and that they should not give up if the first trial with medication is unsuccessful;
- advise patients that recovery of complete erectile function after prostatectomy can take time;
- inform patients that changes in ejaculation will occur after surgery; and
- advise patients to resume sexual activity when they and their partners are ready. ❁

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*The opinions expressed in editorials are those of the authors and do not imply endorsement by the College of Family Physicians of Canada.*

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## Shaking up health care

### *Treatment through a collective perspective*

**Maxine Dumas Pilon, MD**

**O**ur health care system is going through a major crisis. In spite of deep cuts, there is a huge deficit, which has left medical professionals, politicians, and patients perplexed. Added to this is a severe shortage of staff. Waiting lists are getting longer. There is public outcry. This situation has left many physicians deeply dissatisfied.

#### Anatomy of a crisis

Our values as a society are at the heart of the problem. The core values of our society have created the context for the problems we are

currently experiencing. One value that comes to mind immediately is the dominance of individual rights over collective rights. The period of virtual tyranny by the Church, during which citizens were rigidly defined by their social obligations, has ended, and the pendulum has swung the other way over the last 5 decades. People are now free to decide whether or not to contribute to their communities. Our society vigorously defends individual rights and freedoms but does not impose the responsibilities that come with them. To propose that it should would likely be viewed as sermonizing.